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MEMORANDUM

TO: Matt Mitguard, Site Assessment Manager
States, Tribes & Site Assessment Section, SFD-9-1

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105180 Amendment 1

DATE: May 15, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Jalk Fee
SITE ACCOUNT NO.:	09 ZZ LA00
CERCLIS ID NO.:	CAD0000024554
CASE NO.:	31520
SDG NO.:	Y0SL3
LABORATORY:	A4 Scientific (A4)
ANALYSIS:	Volatiles
SAMPLES:	7 Water Samples
COLLECTION DATE:	March 18 and 20, 2003
REVIEWER:	Nanny Estrada, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 31520 SDG No.: Y0SL3
Site: Jalk Fee
Laboratory: A4 Scientific
Reviewer: Nanny Estrada, ESAT/LDC
Date: May 15, 2003

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0SL3, Y0SL4, Y0SL6, Y0SL7, Y0SL8, Y0SL9 and Y0SM0
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	March 18 and 20, 2003
Sample Receipt Date:	March 20 and 21, 2003
Extraction Date:	Not Applicable
Analysis Date:	March 27, 30 and 31, 2003

FIELD QC:

Trip Blanks (TB):	Not Provided
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Y0SL6, Y0SL7 and Y0SL9
Background Samples (BG):	Y0SL3
Field Duplicates (D1):	Y0SL8 and Y0SM0
Field Duplicates (D2):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK4N:	Y0SL6, Y0SL7, Y0SL3DL, Y0SL9 and Y0SL3
VBLK4R:	Y0SL4DL and Y0SL4
VBLK4S:	Y0SL8 and Y0SM0
VBLK4U:	VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for several analytes are qualified as nondetected and estimated (U,J) due to contamination in method blanks, storage blank and equipment blanks.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

3) Detected results and quantitation limits for some analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) problems.

SAMPLING ISSUES:

- Detected results for chloromethane, acetone, and toluene are qualified as nondetected and estimated (U,J) due to equipment blank contamination.

ADDITIONAL COMMENTS:

Several analytes were detected in the background sample Y0SL3 (see Table 1A).

Manual integrations were performed for bromomethane in the continuing calibration VSTD0254 and for xylenes in samples Y0SL3 and Y0SL4 because the software failed to accurately integrate the entire peak. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

Other than laboratory artifact (retention time = 7.8 minutes), tentatively identified compounds (TICs) were detected in samples Y0SL3, Y0SL4, Y0SL6, and Y0SL9 (see attached Form 1LCFs and SDG Narrative).

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program (CLP) Statement of Work for Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	C, D
CONTINUING CALIBRATIONS	NO	C, E
LABORATORY BLANKS	NO	B
FIELD BLANKS	YES	
SYSTEM MONITORING COMPOUNDS	NO	F
MATRIX SPIKE/DUPLICATES	N/A	
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, H
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	G

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank, storage blank and equipment blank contamination, and are flagged "J" in Table 1A.

- Acetone in samples Y0SL3, Y0SL8 and Y0SM0
- Bromoform in samples Y0SL6 and Y0SL7
- Chloroform in samples Y0SL3, Y0SL6, Y0SL7, Y0SL8 and Y0SM0
- Chloromethane in samples Y0SL3, Y0SL4, Y0SL7, Y0SL9 and Y0SM0
- Methylene chloride in samples Y0SL3, Y0SL8, Y0SL9, Y0SM0 and storage blank VHBLK01
- Toluene in samples Y0SL3, Y0SL4, and Y0SL8

Acetone was found in method blanks VBLK4R, VBLK4S, equipment blanks Y0SL6, Y0SL7 and Y0SL9 at concentrations of 2 μg/L, 1 μg/L, 3 μg/L, 2 μg/L and 3 μg/L, respectively. Bromoform was found in method blanks VBLK4N and VBLK4R at concentrations of 0.4 μg/L and 0.2 μg/L, respectively. Chloroform was found in method blanks VBLK4N and VBLK4S at concentrations of 0.4 μg/L and 0.2 μg/L, respectively. Chloromethane was found in method blank VBLK4S and storage blank VHBLK01 at concentrations of 0.2 μg/L and 0.2 μg/L, respectively. Methylene chloride was found in method blanks VBLK4N, VBLK4R, VBLK4S, VBLK4U and equipment blank Y0SL6 at concentrations of 0.2 μg/L, 0.2 μg/L, 0.4 μg/L, 0.2 μg/L and 2 μg/L, respectively. Toluene was found in equipment blanks Y0SL6, Y0SL7 and Y0SL9 at concentrations of 0.6 μg/L, 0.2 μg/L and 0.2 μg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Chloroform found in sample Y0SL4 (0.3 μg/L) and 2-butanone found in samples Y0SL8 (0.3 μg/L) and Y0SM0 (0.4 μg/L) are not qualified as nondetected and estimated because they are not detected in the associated method blank or equipment blank. The user should note that these analytes may be artifacts because they were found in other method blanks or equipment blanks.

Although 1,2,4-trichlorobenzene (0.2 μg/L), and 1,2,3-trichlorobenzene (0.2 μg/L) were found in method blank VBLK4N; 1,2,3-trichlorobenzene (0.2 μg/L) were detected in method blank VBLK4R; and 2-butanone (0.5 μg/L) was detected in equipment blank Y0SL6, no data are qualified because these analytes were not detected in the associated samples.

A laboratory method blank is laboratory reagent water analyzed with all reagents, deuterated monitoring compounds, and internal standards and carried through the sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged"J" in Table 1A.

- Acetone and 2-butanone in all samples and blanks

Average RRFs below the 0.05 validation criterion were observed for the above analytes in the initial and continuing calibrations (see Table 2).

Detected results for the analytes listed above should be considered as the minimum concentrations at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

The DMC 2-butanone-d5 also had low RRFs (<0.050) in the initial calibration performed on March 26, 2003 and continuing calibrations performed on March 27, 30, 31 and April 2, 2003 (see Table 2). Quantitation of the analytes associated with this DMC may have been affected by the low RRFs (see Table 9).

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to large relative standard deviations (RSDs) in the initial calibration, and are flagged "J" in Table 1A.

- Chloroethane, acetone, methyl acetate and methylene chloride in all samples and blanks

RSDs exceeding the $\leq$30.0% validation criterion were observed for the analytes listed above in the initial calibration performed on March 26, 2003 (see Table 2).

The DMC chloroethane-d5 also had a RSD which exceeded the $\leq$30% validation criterion in the initial calibration performed on March 26, 2003 (see Table 2). Quantitation of the analytes associated with this DMC may have been affected by the high RSD (see Table 9).

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Acetone in samples Y0SL3, Y0SL6, Y0SL7, Y0SL9 and method blank VBLK4N
- Bromoform in sample Y0SL4 and method blank VBLK4R
- Dichlorodifluoromethane, chloromethane, vinyl chloride, chloroethane, trichlorofluoromethane and 4-methyl-2-pentanone in method blank VBLK4U and storage blank VHBLK01

Percent differences exceeding the ±30.0% validation criterion were observed for the analytes listed above in the continuing calibrations performed on March 27, 30 and April 2, 2003 (see Table 2).

The DMC bromoform-d3 also had %Ds which exceeded the ≤30% validation criterion in the continuing calibrations performed on March 30, 31 and April 2, 2003 (see Table 2). Quantitation of the analytes associated with this DMC may have been affected by the high %Ds (see Table 9).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

F. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloropropane-d6}
- 1,2-Dichloropropane and bromodichloromethane in sample Y0SL4

{Toluene-d8}
- Ethylbenzene and xylenes (total) in sample Y0SL4

{Bromoform-d}
- Dibromochloromethane, 1,2-dibromoethane and bromoform in sample Y0SL4

DMC recoveries outside QC limits are shown below.

Sample	DMC	% Recovery	QC Limits
Y0SL4	1,2-Dichloroethane-d4	241	78-129
	1,2-Dichloropropane-d6	78	84-123
	Toluene-d8	184	77-120
	trans-1,3-Dichloropropene-d4	1465	80-128
	Bromoform-d	66	76-135

Detected results for affected analytes where DMC recoveries exceeded QC limits may be biased high. Detected results for affected analytes where DMC recoveries fell below QC limits may be biased low; where the results are nondetected, false negatives may exist. For DMC recoveries that exceeded QC limits, only detected results for associated analytes are

qualified. Sample Y0SL4 was reanalyzed at dilutions only. The high concentration of non-target compounds (alkanes) is suspected to be causing interference.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

G. In the analysis of the field duplicate pair, the following outliers were obtained for the analytes listed below.

Analyte	Y0SL8 (D1) Conc., µg/Kg	Y0SM0 (D1) Conc., µg/Kg	RPD (<25%)
1,1-Dichloroethene	9.2	4.4	71
Methyl acetate	0.21L	<CRQL	N/A
Methyl tert-butyl ether	0.17L	<CRQL	N/A
1,1-Dichloroethane	1.6	0.87	59
cis-1,2-Dichloroethene	2.7	1.6	51
1,1,1-Trichloroethane	0.27L	<CRQL	N/A
Cyclohexane	0.22L	0.15L	N/A
1,2-Dichloroethane	0.69	0.49L	34
Trichloroethene	2.0	0.83	83
1,2-Dichloropropane	0.71	0.41L	54
Tetrachloroethene	0.17L	<CRQL	N/A

A relative percent difference (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a field duplicate sample but is nondetected (U) at the CRQL in the associated field duplicate sample, or when an analyte is detected below the CRQL in both field duplicate samples. The effect of outliers on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. Imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, method defects, or poor sampling or analytical technique.

H. Sample Y0SL3 was reanalyzed at a 5-fold dilution due to high levels of 1,1-dichloroethene and trichloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0SL4 was reanalyzed at a 10-fold dilution due to high levels of cis-1,2-dichloroethene, cyclohexane, methylcyclohexane and isopropylbenzene that exceeded the calibration range. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No. : 31520 SDG No. : Y0SL3
Site : JALK FEE
Lab : A4 SCIENTIFIC, INC.
Reviewer : NANNY ESTRADA, ESAT/LDC
Date : MAY 15, 2003

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples For Volatiles

Station Location :	JF-GW-1			JF-GW-2			JF-GW-4			JF-GW-5			JF-GW-6			JF-GW-8			JF-GW-3		
Sample ID :	Y0SL3		BG	Y0SL4			Y0SL6		EB	Y0SL7		EB	Y0SL8		D1	Y0SL9		EB	Y0SM0		D1
Collection Date :	03/18/2003			03/18/2003			03/18/2003			03/18/2003			03/20/2003			03/20/2003			03/20/2003		
Dilution Factor :	1.0			1.0			1.0			1.0			1.0			1.0			1.0		
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Dichlorodifluoromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Chloromethane	0.5U	J	B	0.5U	J	B	0.5U			0.5U	J	B	0.5U			0.5U	J	B	0.5U	J	B
Vinyl Chloride	0.5U			8			0.5U			0.5U			0.5U			0.5U			0.5U		
Bromomethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Chloroethane	0.5U	J	D	0.2L	J	AD	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D
Trichlorofluoromethane	0.3L	J	A	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,1-Dichloroethene	58		H	18			0.5U			0.5U			9		G	0.5U			4		G
1,1,2-Trichloro-1,2,2-trifluoroethan	0.7			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Acetone	8U	J	BCDE	5U	J	CD	3L	J	ACDE	2L	J	ACDE	5U	J	BCD	3L	J	ACDE	5U	J	BCD
Carbon Disulfide	0.2L	J	A	0.3L	J	A	0.5U			0.5U			0.5U			0.5U			0.5U		
Methyl Acetate	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.2L	J	ADG	0.5U	J	D	0.5U	J	DG
Methylene Chloride	0.5U	J	BD	0.5U	J	D	2	J	D	0.5U	J	D	0.7U	J	BD	0.5U	J	BD	0.5U	J	BD
trans-1,2-Dichloroethene	0.3L	J	A	12			0.5U			0.5U			0.5U			0.5U			0.5U		
Methyl tert-Butyl Ether	0.3L	J	A	0.5U			0.5U			0.5U			0.2L	J	AG	0.5U			0.5U		G
1,1-Dichloroethane	8			4			0.5U			0.5U			2		G	0.5U			0.9		G
cis-1,2-Dichloroethene	13			120		H	0.5U			0.5U			3		G	0.5U			2		G
2-Butanone	5U	J	C	5U	J	C	0.5L	J	AC	5U	J	C	0.3L	J	AC	5U	J	C	0.4L	J	AC
Bromochloromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Chloroform	0.8U	J	B	0.3L	J	A	0.5U	J	B	0.5U	J	B	0.5U	J	B	0.5U			0.5U	J	B
1,1,1-Trichloroethane	1			0.5U			0.5U			0.5U			0.3L	J	AG	0.5U			0.5U		G
Cyclohexane	0.5			70		H	0.5U			0.5U			0.2L	J	AG	0.5U			0.2L	J	AG
Carbon Tetrachloride	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Benzene	0.5U			2			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dichloroethane	2			0.5U			0.5U			0.5U			0.7		G	0.5U			0.5L	J	AG
Trichloroethene	38		H	24			0.5U			0.5U			2		G	0.5U			0.8		G
Methylcyclohexane	0.5U			78		H	0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dichloropropane	5			0.5U	J	F	0.5U			0.5U			0.7		G	0.5U			0.4L	J	AG
Bromodichloromethane	0.5U			0.5U	J	F	0.5U			0.5U			0.5U			0.5U			0.5U		
cis-1,3-Dichloropropene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
4-Methyl-2-pentanone	5U			5U			5U			5U			5U			5U			5U		
Toluene	0.9U	J	B	1U	J	B	0.6			0.2L	J	A	0.5U	J	B	0.2L	J	A	0.5U		
trans-1,3-Dichloropropene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,1,2-Trichloroethane	0.2L	J	A	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Tetrachloroethene	20			7			0.5U			0.5U			0.2L	J	AG	0.5U			0.5U		G
2-Hexanone	5U			5U			5U			5U			5U			5U			5U		
Dibromochloromethane	0.5U			0.5U	J	F	0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dibromoethane	0.5U			0.5U	J	F	0.5U			0.5U			0.5U			0.5U			0.5U		

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No. : 31520 SDG No. : Y0SL3
Site : JALK FEE
Lab : A4 SCIENTIFIC, INC.
Reviewer : NANNY ESTRADA, ESAT/LDC
Date : MAY 15, 2003

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples For Volatiles

Station Location :	JF-GW-1			JF-GW-2			JF-GW-4			JF-GW-5			JF-GW-6			JF-GW-8			JF-GW-3		
Sample ID :	Y0SL3		BG	Y0SL4			Y0SL6		EB	Y0SL7		EB	Y0SL8		D1	Y0SL9		EB	Y0SM0		D1
Collection Date :	03/18/2003			03/18/2003			03/18/2003			03/18/2003			03/20/2003			03/20/2003			03/20/2003		
Dilution Factor :	1.0			1.0			1.0			1.0			1.0			1.0			1.0		
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Chlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Ethylbenzene	0.2L	J	A	0.8	J	F	0.5U			0.5U			0.5U			0.5U			0.5U		
Xylenes (total)	1			2	J	F	0.5U			0.5U			0.5U			0.5U			0.5U		
Styrene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
Bromoform	0.5U			0.5U	J	EF	0.5U	J	B	0.5U	J	B	0.5U			0.5U			0.5U		
Isopropylbenzene	0.5U			29		H	0.5U			0.5U			0.5U			0.5U			0.5U		
1,1,2,2-Tetrachloroethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,3-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,4-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2-Dibromo-3-chloropropane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2,4-Trichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		
1,2,3-Trichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5U			0.5U		

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL - Contract Required Quantitation Limit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No. : 31520 SDG No. : Y0SL3
Site : JALK FEE
Lab : A4 SCIENTIFIC, INC.
Reviewer : NANNY ESTRADA, ESAT/LDC
Date : MAY 15, 2003

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples For Volatiles

Station Location :	Method Blank			Method Blank			Method Blank			Method Blank			Storage Blank			CRQL					
Sample ID :	VBLK4N			VBLK4R			VBLK4S			VBLK4U			VHBLK01								
Collection Date :																					
Dilution Factor :	1.0			1.0			1.0			1.0			1.0								
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Dichlorodifluoromethane	0.5U			0.5U			0.5U			0.5U	J	E	0.5U	J	E	0.5					
Chloromethane	0.5U			0.5U			0.2L	J	A	0.5U	J	E	0.2L	J	AE	0.5					
Vinyl Chloride	0.5U			0.5U			0.5U			0.5U	J	E	0.5U	J	E	0.5					
Bromomethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Chloroethane	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	DE	0.5U	J	DE	0.5					
Trichlorofluoromethane	0.5U			0.5U			0.5U			0.5U	J	E	0.5U	J	E	0.5					
1,1-Dichloroethene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,1,2-Trichloro-1,2,2-trifluoroethan	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Acetone	5U	J	CDE	2L	J	ACD	1L	J	ACD	5U	J	CD	5U	J	CD	5					
Carbon Disulfide	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Methyl Acetate	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5U	J	D	0.5					
Methylene Chloride	0.2L	J	AD	0.2L	J	AD	0.4L	J	AD	0.2L	J	AD	0.9U	J	BD	0.5					
trans-1,2-Dichloroethene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Methyl tert-Butyl Ether	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,1-Dichloroethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
cis-1,2-Dichloroethene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
2-Butanone	5U	J	C	5U	J	C	5U	J	C	5U	J	C	5U	J	C	5					
Bromochloromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Chloroform	0.4L	J	A	0.5U			0.2L	J	A	0.5U			0.5U			0.5					
1,1,1-Trichloroethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Cyclohexane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Carbon Tetrachloride	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Benzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,2-Dichloroethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Trichloroethene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Methylcyclohexane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,2-Dichloropropane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Bromodichloromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
cis-1,3-Dichloropropene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
4-Methyl-2-pentanone	5U			5U			5U			5U	J	E	5U	J	E	5					
Toluene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
trans-1,3-Dichloropropene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,1,2-Trichloroethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Tetrachloroethene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
2-Hexanone	5U			5U			5U			5U			5U			5					
Dibromochloromethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,2-Dibromoethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					

ANALYTICAL RESULTS
Tier 3 Table 1A

Case No. : 31520 SDG No. : Y0SL3
Site : JALK FEE
Lab : A4 SCIENTIFIC, INC.
Reviewer : NANNY ESTRADA, ESAT/LDC
Date : MAY 15, 2003

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Low Level Water Samples For Volatiles

Station Location :	Method Blank			Method Blank			Method Blank			Method Blank			Storage Blank								
Sample ID :	VBLK4N			VBLK4R			VBLK4S			VBLK4U			VHBLK01			CRQL					
Collection Date :																					
Dilution Factor :	1.0			1.0			1.0			1.0			1.0								
Volatile Compound	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**	**Result**	**Val**	**Com**
Chlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Ethylbenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Xylenes (total)	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Styrene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
Bromoform	0.4L	J	A	0.2L	J	AE	0.5U			0.5U			0.5U			0.5					
Isopropylbenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,1,2,2-Tetrachloroethane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,3-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,4-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,2-Dichlorobenzene	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,2-Dibromo-3-chloropropane	0.5U			0.5U			0.5U			0.5U			0.5U			0.5					
1,2,4-Trichlorobenzene	0.2L	J	A	0.5U			0.5U			0.5U			0.5U			0.5					
1,2,3-Trichlorobenzene	0.2L	J	A	0.2L	J	A	0.5U			0.5U			0.5U			0.5					

Val - Validity. Refer to Data Qualifiers in Table 1B.
Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
CRQL - Contract Required Quantitation LImit, N/A - Not Applicable, NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
FB - Field Blank, EB - Equipment Blank, TB - Trip Blank, BG - Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October 1999.

U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
L	Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Table 2
Calibration Summary

Case No.: 31520 SDG No.: Y0SL3
Site: Jalk Fee
Laboratory: A4 Scientific
Reviewer: Nanny Estrada, ESAT/LDC
Date: May 15, 2003

RELATIVE RESPONSE FACTORS

	$\overline{\text{RRF}}$	RRF	RRF	RRF	RRF
Analysis date:	3/26/03	3/27/03	3/30/03	3/31/03	4/2/03
Analysis time:	1819-2101	0859	1206	1404	1017
GC/MS I.D.:	E-5973	E-5973	E-5973	E-5973	E-5973
Analyte	Init.	Cont.	Cont.	Cont.	Cont.
Acetone	0.032	0.021	0.033	0.027	0.034
2-Butanone	0.039	0.036	0.043	0.042	0.049
2-Butanone-d5	0.035	0.032	0.043	0.038	0.043

PERCENT RELATIVE STANDARD DEVIATIONS AND PERCENT DIFFERENCES

	%RSD	%D	%D	%D	%D
Analysis Date:	3/26/03	3/27/03	3/30/03	3/31/03	4/2/03
Analysis Time:	1819-2101	0859	1206	1404	1017
GC/MS I.D.:	E-5973	E-5973	E-5973	E-5973	E-5973
Analyte	Init.	Cont.	Cont.	Cont.	Cont.
Dichlorodifluoromethane	-----	-----	-----	-----	33.4
Chloromethane	-----	-----	-----	-----	33.3
Vinyl chloride	-----	-----	-----	-----	30.7
Chloroethane	31.6	-----	-----	-----	43.2
Trichlorofluoromethane	-----	-----	-----	-----	37.1
Acetone	63.5	-34.4	-----	-----	-----
Methyl acetate	45.2	-----	-----	-----	-----
Methylene chloride	40.5	-----	-----	-----	-----
4-Methyl-2-pentanone	-----	-----	-----	-----	31.4
Bromoform	-----	-----	35.2	-----	-----
Chloroethane-d5	31.0	-----	-----	-----	-----
Bromoform-d	-----	-----	35.9	36.9	30.5

- = RRF biased low; + = RRF biased high.

ASSOCIATED SAMPLES AND METHOD BLANKS

Initial 3/26/03: Y0SL3, Y0SL3DL, Y0SL4, Y0SL4DL, Y0SL6, Y0SL7, Y0SL8, Y0SL9, Y0SM0; method blanks VBLK4N, VBLK4R, VBLK4S, VBLK4U; storage blank VHBLK01
Cont. 3/27/03: Y0SL6, Y0SL7, Y0SL3DL, Y0SL9, Y0SL3 and method blank VBLK4N
Cont. 3/30/03: Y0SL4, Y0SL4DL and method blank VBLK4R
Cont. 3/31/03: Y0SL8, Y0SM0 and method blank VBLK4S
Cont. 4/2/03: Method blank VBLK4U and storage blank VHBLK01

1LCF

LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
Y0SL3

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 31520 Client No.: SDG No.: Y0SL3

Lab Sample ID: 2761.002 Date Received: 03/20/2003

Lab File ID: E4023 Date Analyzed: 03/27/2003

Purge Volume: 25 (ML) Dilution Factor: 1.0

GC Column: DB-624 ID: 0.20 (MM) Length: 25 (M)

Number TICs found: 7

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01	000078-78-4	Butane, 2-methyl-	2.64	1.1	JN
02	000075-43-4	Methane, dichlorofluoro-	2.73	0.61	JN
03	000354-23-4	Ethane, 1,2-dichloro-1,1,2-t	3.05	0.71	JN
04	000611-14-3	Benzene, 1-ethyl-2-methyl-	12.36	0.71	JN
05	000108-67-8	Benzene, 1,3,5-trimethyl-	12.85	1.0	JN
06		UNKNOWN	13.00	0.89	J
07	000124-19-6	Nonanal (in EB Y03L9)	14.11	0.74	JN
08					
09		SL, 5/15/03.			
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

1LCF

LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
Y0SL4

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 31520 Client No.: SDG No.: Y0SL3

Lab Sample ID: 2761.003 Date Received: 03/20/2003

Lab File ID: E4073 Date Analyzed: 03/30/2003

Purge Volume: 25 (ML) Dilution Factor: 1.0

GC Column: DB-624 ID: 0.20 (MM) Length: 25 (M)

Number TICs found: 24

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01	000078-78-4	Butane, 2-methyl-	2.62	3.3	JN
02	000079-29-8	Butane, 2,3-dimethyl-	3.69	2.3	JN
03	000287-92-3	Cyclopentane	3.78	1.4	JN
04	002453-00-1	Cyclopentane, 1,3-dimethyl-	5.95	12	JN
05	002532-58-3	Cyclopentane, 1,3-dimethyl-,	6.03	5.0	JN
06	001640-89-7	Cyclopentane, ethyl-	7.11	2.9	JN
07	002815-58-9	Cyclopentane, 1,2,4-trimethy	7.21	5.7	JN
08	015890-40-1	Cyclopentane, 1,2,3-trimethy	7.39	10	JN
09	004259-00-1	Cyclopentane, 1,1,2-trimethy	7.83	3.5	JN
10	006876-23-9	Cyclohexane, 1,2-dimethyl-,	8.67	8.8	JN
11	002207-03-6	Cyclohexane, 1,3-dimethyl-,	8.83	5.3	JN
12	002207-01-4	Cyclohexane, 1,2-dimethyl-,	9.45	2.4	JN
13	001678-91-7	Cyclohexane, ethyl-	9.52	7.2	JN
14	003073-66-3	Cyclohexane, 1,1,3-trimethyl	9.60	7.7	JN
15	001795-26-2	Cyclohexane, 1,3,5-trimethyl	9.94	1.6	JN
16	000694-72-4	Pentalene, octahydro-	10.47	5.0	JN
17	004926-78-7	Cyclohexane, 1-ethyl-4-methy	11.21	1.2	JN
18	000103-65-1	Benzene, propyl-	12.26	12	JN
19	000135-98-8	Benzene, (1-methylpropyl)-	13.02	5.0	JN
20	000637-50-3	Benzene, 1-propenyl-	13.44	4.1	JN
21	002870-04-4	Benzene, 2-ethyl-1,3-dimethy	13.85	6.2	JN
22	000767-58-8	Indan, 1-methyl-	13.96	7.7	JN
23	000095-93-2	Benzene, 1,2,4,5-tetramethyl	14.60	8.7	JN
24	017059-48-2	1H-Indene, 2,3-dihydro-1,6-d	15.03	4.0	JN
25					
26					
27					
28					
29					
30					

1LCF

LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
Y0SL6 (EB)

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 31520 Client No.: SDG No.: Y0SL3

Lab Sample ID: 2761.004 Date Received: 03/20/2003

Lab File ID: E4014 Date Analyzed: 03/27/2003

Purge Volume: 25 (ML) Dilution Factor: 1.0

GC Column: DB-624 ID: 0.20 (MM) Length: 25 (M)

Number TICs found: 1

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01	000075-28-5	Isobutane	2.01	0.79	JN
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

1LCF

LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
Y0SL9 (EB)

Lab Name: A4 SCIENTIFIC, INC. Contract: 68-W-01-038

Lab Code: A4 Case No.: 31520 Client No.: SDG No.: Y0SL3

Lab Sample ID: 2775.002 Date Received: 03/21/2003

Lab File ID: E4022 Date Analyzed: 03/27/2003

Purge Volume: 25 (ML) Dilution Factor: 1.0

GC Column: DB-624 ID: 0.20 (MM) Length: 25 (M)

Number TICs found: 1

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01	000124-19-6	Nonanal	14.11	0.83	JN
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
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29					
30					

A4 SCIENTIFIC, INC.
1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: 68W01038	Case #: 31520	SDG #: Y0SL3

SDG NARRATIVE

EPA Sample #	Lab Sample #	Straight Chain (µg/L)	Branched (µg/L)	Cyclic (µg/L)
Y0SL3	2761.002		1.2	
Y0SL4	2761.003		7.0	86
Y0SL4DL	2761.003DL			117
Y0SL6 (FB)	2761.004		0.8	

The sample Y0SL4 failed twice in DMC recovery but its dilution had acceptable recoveries. The high concentration of non-targets (alkanes) in the sample is suspected to be causing interference. The lab is reporting the best analysis data.

Manual integrations were performed for the following samples for the compounds listed against them.

Y0SL3 – Xylene(total)
Y0SL4 – Xylene(total)
VSTD0254 - Bromoethane

These manual integrations were necessary because the software failed to accurately integrate the entire peak. In all the above instances, the quantitation reports are flagged with "m". A hard copy printout of the manual integration, the scan ranges, and initials of the analyst or manager is included in the data package.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package and in the computer readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature:

Reddy Pakanati / Lab Manager
Signature and Title

4/12/03
Date of Signature